REMARKS

Claims 1-26 are pending. The specification and claims are amended hereby. A marked-up version showing the amendments to the specification and claims is attached hereto as **"Version with markings to show changes made."**

The drawings were objected to under 37 CFR § 1.83(a), since a tubular barrel in the shape of a rhombus and square are not shown. A Request for Approval of Drawing Changes is submitted herewith. The Examiner is requested to review and approve the proposed drawing changes. It should be noted, however, that Figs. 5 and 8 also show a rhombus.

Claims 1-26 were rejected under 35 USC §112, second paragraph, as being indefinite. The claims have been amended in view of the Examiner's comments. Claim 21, however, has not been amended since a deposition apparatus is defined, for example, as an apparatus for depositing aluminum, as described in the paragraph bridging pages 21 and 22 of the specification.

Claims 1-4, 7-12, 21 and 23-26 were rejected under 35 USC §102(b) as being clearly anticipated by ***Pletscher***. This rejection is respectively traversed.

Independent claim 1 requires a tubular barrel having a porous peripheral surface. ***Pletscher*** does not teach or suggest such a surface. Furthermore, ***Pletscher*** would not rendered this feature obvious since the mass of smooth-surface or abrasive particles would not be contained if such a porous peripheral surface was provided. It is noted that in item 8 of the Office Action, the Examiner even admits that ***Pletscher*** does not show a mesh porous surface. Accordingly, the claims are not anticipated by ***Pletscher***.

Claims 5, 6 and 13-17 were rejected under 35 USC § 103(a) as being unpatentable over ***Pletscher***, alone. The Examiner argues that it would have been obvious to change the shape of the barrel to accommodate differently shaped workpieces. This rejection is respectfully traversed.

It is respectfully submitted that there is no reason suggested by ***Pletscher*** to change the shape of the barrel to accommodate differently shaped workpieces. That is, it does not appear necessary to change the shape of the barrel to accommodate differently shaped workpieces. Accordingly, ***Pletscher*** does not suggest that different shape barrels will be necessary due to differently shaped workpieces.

In regard to claims 13-17, the Examiner argues that more than one compartment in the barrel would have been obvious. However, ***Pletscher*** fails to provide any teaching or suggestion of providing more than one compartment in the barrel.

Claims 18-20 were rejected under 35 USC § 103(a) as being unpatentable over ***Pletscher*** in view of ***Steube***. In this rejection, the Examiner argues that although ***Pletscher*** does not show a mesh porous surface, ***Steube*** would have rendered such a surface obvious. This rejection is respectively traversed.

As noted above, one of ordinary skill in the art would not have been motivated to employ a porous surface in ***Pletscher*** because such would not allow the mass of smooth-surface or abrasive particles to be contained within the barrel. Accordingly, one of ordinary skill in the art would not have combined the references as asserted by the Examiner.

Claim 22 was rejected under 35 USC § 103(a) as being unpatentable over ***Pletscher*** in view of ***Kanouse***. ***Kanouse*** is cited for its disclosure of a tubular barrel for blast treating workpieces. This rejection is respectfully traversed.

Kanouse would not have motivated ***Pletscher*** to employ a blasting chamber. The mere fact that ***Kanouse*** teaches an apparatus having a tubular barrel for blast treating workpieces would not have suggested employing such in ***Pletscher***.

New claim 27 is added. New claim 27 is further characterized in providing a surface-treating material supply section outside the tubular barrel.

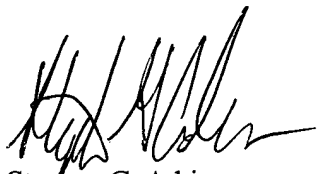
For all the foregoing reasons, the claimed invention distinguishes over the cited art and defines patentable subject matter. Favorable reconsideration is earnestly solicited.

Should the Examiner deem that any further action by applicants would be desirable to place the application in condition for allowance, the Examiner is encouraged to telephone applicants' undersigned attorney.

In the event that this paper is not timely filed, applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees which may be due with respect to this paper, may be charged to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, WESTERMAN& HATTORI, LLP



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Attachments: **Version with marking to show changes made**
Request for Approval of Drawing Changes

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VERSION WITH MARKINGS TO SHOW CHANGES MADE (09/901,044)

IN THE SPECIFICATION:

Please amend the specification as follows:

Paragraph beginning at page 9, line 21 has been amended as follows:

Fig. 4A is a diagrammatic front view of an interior of a vacuum-treating chamber in a use example as a deposition apparatus and Figs. 4B and 4C show alternate shapes of a tubular barrel;

Paragraph beginning at page 13, line 5 has been amended as follows:

The porous peripheral surface provided in the tubular barrel may be anything provided that the surface-treating material can be reached to a work piece accommodated in the tubular barrel, including a mesh-formed peripheral surface as a representative thereof. The mesh-formed peripheral surface includes, for example, those made using a stainless-steel mesh net. The stainless-steel mesh net may be, for example, formed by a net-formed plate obtained by punching or etching a stainless steel plate, or formed by knitting [a] stainless-steel linear members. Meanwhile, the porous peripheral surface may be a slit-formed peripheral surface. The slit-formed peripheral surface, for example, includes those made by arranging stainless-steel linear members in a stripe form with a gap. Furthermore, the porous peripheral surface may be a grating-formed peripheral surface. The opening ratio of the porous peripheral surface (ratio in area of the opening to the entire peripheral surface), although depending on the form and size of a

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work piece, is desirably 50% to 95%, and more desirably 60% to 85%. If the opening ratio is smaller than 50%, the peripheral surface acts as a barrier between the surface-treating material supply section and the work piece resulting in a fear of [lower in] lowering the treatment efficiency. If the opening ratio is greater than 95%, there is a fear that the peripheral surface be deformed or damaged upon treating or handling thereof. In addition, the thickness of the peripheral surface is selected with considerations to the opening ratio or strength thereof, and desirably 0.1 mm to 10 mm. Further, more desirably 0.3 mm to 5 mm in consideration to easy handling.

Paragraph beginning at page 16, line 7 has been amended as follows:

The vertical section of the tubular barrel with respect to the rotational axis, preferably, is polygonal having at least three corners with an internal angle of 30° to 100°. More preferably, the form is polygonal having at least three corners with an internal angle of 55° to 95°. Particularly, the barrel having a triangular or rectangular section is well suited in respect of easy manufacture of the barrel. Furthermore, the barrel equal in angle at all the corners, e.g. the barrel having a section of a regular triangle or square, is particularly preferred because of capability of evenly, stably stopping the slide of the work piece at the corner and inverting the surfaces thereof at that point as a fulcrum. In the case that the length of the work piece is in relationship of equal to or greater than one-third[s] of the one-side length of the polygon forming the section, the work

piece can be efficiently inverted of surfaces at the corner, as a fulcrum, having an internal angle of 30° to 100°.

Paragraph beginning at page 25, line 10 has been amended as follows:

The deposition apparatus shown in Fig. 4A exhibits the above effects and is convenient in respect of providing the below advantage.

Paragraph beginning at page 26, line 18 has been amended as follows:

In addition, there is shown in the deposition apparatus of Fig. 4A a structure that the support members 57 supporting the tubular barrels 55 are disposed in the upper region of the vacuum-treating chamber 51 while the boat 52 as an evaporating section is in the lower region of the chamber, i.e. a structure for deposition in one way toward the work pieces. However, the relationship between the support member and the evaporating section is not limited to this structure. It is preferred to properly determine the positional relationship or the number depending upon a work-piece treating amount and film forming condition.

Paragraph beginning at page 27, line 4 has been amended as follows:

Although the deposition apparatus shown in Fig. 4A has six tubular barrels 55 supported in one support member 57, the number of tubular barrels supported in the support member is not limited to that, i.e. one in the number is satisfactory. Furthermore, as shown in Figs. 4B and 4C, the shape of the tubular barrel can be a square or a rhombus, respectively.

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Paragraph beginning at page 27, line 13 has been amended as follows:

The deposition apparatus shown in Fig. 5 is an apparatus with another structure. Fig. 5 is a diagrammatic front view (a partially perspective view) of an inside of a vacuum-treating chamber 101 of the same. This apparatus has two support members 107 juxtaposed, for rotation about a horizontal rotational axis 106 in an upper region of the vacuum-treating chamber 101 connected to an evacuating system, not shown. In the circumferential outward of the rotational axis of the support member, six tubular barrels 105 formed by mesh net of stainless steel having a rhombic vertical section with respect to the rotational axis are detachably attached in view of well handling thereof. The rhombic tubular barrel 105 has an interior divided symmetrically left and right into two by a partition formed by stainless-steel mesh net, to form partitioned chambers regular-triangular in vertical section with respect to the rotational axis. In order to provide even deposition treatment to the magnets 140 accommodated in the left and right partitioned chambers, the left and right partitioned chambers are partitioned by a partition in a positional relationship having a rotational axis 106 on an extension between them (see the one-dot chain line in Fig. 5). In addition, the structure in the lower region of the chamber interior is similar to that of the deposition apparatus shown in Fig. 4A. By rotating the support member 107 about the rotational axis 106 (see the arrow in Fig. 5) it is possible to obtain an effect similar to that of the deposition apparatus shown in Fig. 4A.

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Paragraph beginning at page 29, line 1 has been amended as follows:

Fig. 7 is a diagrammatic perspective view of the tubular barrel 125 having a vertical section of a convex lens with respect to the rotational axis to be used in the form shown in Fig. 6. The tubular barrel 125, to be opened and closed along a lengthwise direction, is made up by a lid 125a and a cage 125b structured for open and close through hinges, not shown, to have a support shaft 128 for supporting the barrel in the support member 127. Because the use of such a tubular barrel 125 facilitates the insertion and removal of work pieces, it is possible to suppress the work pieces from breakage or cracks upon insertion and removal thereof. In addition, where such a tubular barrel 125 is continuously used, there is a fear that a gap [occur] occurs between the lid 125a and the cage 125b due to deformation of the mesh net forming the barrel by the affection of thermal hysteresis in the deposition treatment thus resulting in falling off of the work pieces through the gap. It is accordingly preferred to attach a work-piece-fall preventing plate 129 to the cage 125b in a lengthwise direction of an opening thereof (the work-piece-fall preventing plate 129 may be attached to the lid 125a in a lengthwise direction of the opening thereof). During deposition treatment, the lid 125a and the cage 125b are fastened and used with a clip not shown. The interior of the tubular barrel 125 is divided symmetrically left and right into two to form partitioned chambers. The partition 130 between the partitioned chambers is formed by stainless-steel mesh net. The partitioned chamber is divided into two by a spiral partitioning member 131 provided vertical to the rotational axis and formed by a stainless-steel linear member to have a gap therein. If work pieces are accommodated in the formed partitioned

accommodation sections on a one-to-one basis to carry out deposition treatment to the work pieces in a spaced state, the work pieces can be smoothly inverted of surfaces at the slide stops as fulcrums without causing dispersion in deposition due to overlap between the work pieces or breakage or cracks due to collision between them. In addition, the lid 125a and the cage 125b may be structured completely separated without connection to be used by clip fastening when necessary instead of connection through the hinges, from the viewpoint of securing easy insertion and removal of work pieces and easy attachment and detachment of the partition 130 or spiral partitioning member 131.

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IN THE CLAIMS:

Claims 2-8, 10-20 and 23-26 have been amended as follows:

2. (Amended) An apparatus according to claim 1, wherein said tubular barrel [is in] has a [vertical] sectional [form] shape with respect to the rotational axis having at least one corner at an internal angle of 30° to 100°, said corner being provided as said slide stop.

3. (Amended) An apparatus according to claim 2, wherein said tubular barrel [is in] has a [vertical] sectional polygonal [form] shape with respect to the rotational axis having at least three corners at internal angles of 30° to 100°, said corners being provided as said slide stops.

4. (Amended) An apparatus according to claim 3, wherein said tubular barrel [is in] has a [vertical] sectional [form] shape of a regular triangle with respect to the rotational axis.

5. (Amended) An apparatus according to claim 3, wherein said tubular barrel [is in] has a [vertical] sectional [form] shape of a square with respect to the rotational axis.

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6. (Amended) An apparatus according to claim 2, wherein said tubular barrel [is in] has a [vertical] sectional [form] shape of a rhombus with respect to the rotational axis.

7. (Amended) An apparatus according to claim 1, wherein said tubular barrel [is in] has a [vertical] sectional [form] shape of a convex[-formed] curve in a part [thereof] of said sectional shape with respect to the rotational axis.

8. (Amended) An apparatus according to claim 7, wherein said tubular barrel [is in] has a [vertical] sectional [form] shape of an ellipse or convex[-formed] lens with respect to the rotational axis.

10. (Amended) An apparatus according to claim 9, wherein said protrusion is provided at an angle of 30° to 100° to a tangential line [on a forward side] in a direction of rotation in the [vertical] sectional [form] shape with respect to the rotational axis of said tubular barrel.

11. (Amended) An apparatus according to claim 9, wherein said protrusion is in any of a comb [form] shape, a plate [form] shape and a rod [form] shape.

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12. (Amended) An apparatus according to claim 9, wherein a number of said protrusion is [provided] one to seven [in the number].

13. (Amended) An apparatus according to claim 1, wherein said tubular barrel has an interior comprising a plurality of partitioned accommodating sections formed by [division into two or more by] one or more partitioning members provided [vertical] perpendicular to the rotational axis of said tubular barrel.

14. (Amended) An apparatus according to claim 13, wherein said partitioning member is formed [in a porous form structured] by a linear member.

15. (Amended) An apparatus according to claim 1, wherein said tubular barrel has an interior comprising a plurality of partitioned chambers formed by one or more partitions parallel [dividing into two or more the vertical sectional form with respect] to the rotational axis of said tubular barrel.

16. (Amended) An apparatus according to claim 15, wherein said partitioned chamber is in a [vertical] sectional [form] shape with respect to the rotational axis having at least one corner at an internal angle of 30° to 100°, said corner being provided as said slide stop.

30° to 100°, said corner being provided as said slide stop.

17. (Amended) An apparatus according to claim 13 or 15, wherein work pieces are accommodated in one of said partitioned accommodating sections [and/or] and partitioned chambers on a one-to-one basis.

18. (Amended) An apparatus according to claim 1, wherein said porous peripheral surface is a mesh[-formed] shape peripheral surface.

19. (Amended) An apparatus according to claim 1, wherein said porous peripheral surface is a slit[-formed] shape peripheral surface.

20. (Amended) An apparatus according to claim 1, wherein [said tubular barrels in] a plurality of tubular barrels [are] is annularly supported at positions [a circumferential] circumferentially outward of the rotational axis of a support member rotatable about the rotational axis in a horizontal direction.

23. (Amended) A dry surface treating method for treating a work piece, comprising treating said workpiece by using said dry surface treating apparatus according to claim 1.

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24. (Amended) A dry surface treating method according to claim 23, wherein said work piece is a rare earth metal-based permanent magnet in a plate or bow [form] shape.

25. (Amended) A dry surface treating method according to claim 23, wherein said work piece is treated while [being] having its surfaces inverted [of surfaces] at said slide stop as a fulcrum.

26. (Amended) A rare earth metal-based permanent magnet [having been surface-treated] comprising a surface treated by said dry surface treating method according to claim 23.

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